

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE12BX 80L 35K MD DO101 AR12BX MW WF
Nom. 12" Diam x 10" H, Open aperture

Test Number

SP-00686

Test Date

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	60 W
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Lumen Output

Output Lumens	6510
Efficacy	108.5 lm/W

Luminous Dimensions

0° - 180° Size	-0.97
90° - 270° Size	-0.97
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.64
Two luminaires, plane 90°	0.66
Four luminaires	0.64

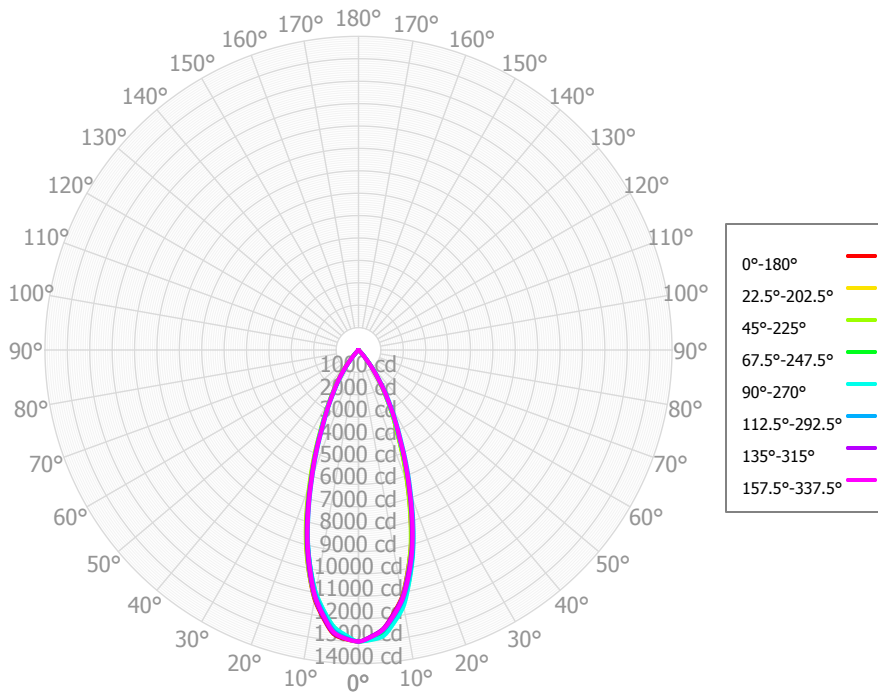
Full Beam Angle

0° - 180°	39°
90° - 270°	40°

IES File Header Contents

Keyword	Value
TEST	SP-00686
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	9/27/2019
LUMCAT	SGE12BX 80L 35K MD DO101 AR12BX MW WF
LUMINAIRE	Nom. 12" Diam x 10" H, Open aperture
OTHER	Matte White reflector trim
OTHER	Deep regressed retrofit high output LED downlight
OTHER	BX Series, Medium Beam
OTHER	39.5 Deg Beam Angle
LAMPCAT	N/A
LAMP	N/A, Bridgelux Vero 29
OTHER	Dimmable driver tested at 100% output
OTHER	Tested CCT: 3500K
OTHER	Total luminaire wattage is approximate
_CCTMULT	CCT Output: 27K x 0.932, 30K x 1.00, 40K x 1.01
_LAMPMULT	60L x 0.76, 70L x 0.86
_CRI	80

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	1,170.94	17.99%	90.00° - 100.00°	0.07	0.00%
10.00° - 20.00°	2,450.61	37.64%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1,910.61	29.35%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	874.55	13.43%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	98.76	1.52%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	1.77	0.03%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	0.98	0.02%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.92	0.01%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.84	0.01%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	6,509.98	100.00%	0.00° - 180.00°	6,510.06	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	330.00°
0.00°	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33	13,015.33
2.50°	12,811.42	12,864.56	12,869.62	12,934.08	12,962.61	12,857.00	12,904.28	12,906.11	12,928.46	12,893.20	12,872.35	12,783.21	12,747.99	12,838.90	12,801.09	12,811.42
5.00°	12,512.43	12,599.01	12,592.09	12,743.19	12,823.70	12,580.75	12,696.89	12,649.39	12,736.86	12,635.87	12,606.26	12,435.96	12,418.35	12,580.87	12,507.22	12,512.43
7.50°	11,884.98	12,001.87	11,973.73	12,212.47	12,270.26	11,880.80	12,034.86	11,959.31	12,077.52	11,973.21	12,000.89	11,787.47	11,745.78	12,031.48	11,913.89	11,884.98
10.00°	11,191.42	11,295.07	11,232.26	11,507.34	11,621.57	11,075.55	11,238.87	11,154.95	11,304.02	11,212.44	11,249.56	11,011.57	10,976.13	11,372.72	11,240.13	11,191.42
12.50°	10,135.74	10,267.29	10,144.88	10,503.96	10,545.68	9,926.72	10,130.95	9,991.75	10,196.20	10,082.94	10,216.54	9,939.58	9,917.24	10,432.65	10,221.80	10,135.74
15.00°	9,041.21	9,126.68	8,994.51	9,336.96	9,422.23	8,728.73	8,923.06	8,780.93	9,000.68	8,907.38	9,055.53	8,795.19	8,770.86	9,380.72	9,155.85	9,041.21
17.50°	7,713.38	7,836.93	7,652.53	8,032.58	8,061.89	7,355.92	7,596.63	7,410.59	7,668.16	7,541.81	7,768.74	7,469.82	7,482.87	8,143.03	7,864.05	7,713.38
20.00°	6,406.78	6,490.54	6,346.56	6,648.95	6,717.39	6,023.14	6,229.78	6,082.56	6,297.13	6,209.60	6,420.68	6,185.43	6,148.36	6,825.88	6,593.29	6,406.78
22.50°	5,240.75	5,316.38	5,157.29	5,425.02	5,458.94	4,842.88	5,041.26	4,909.13	5,122.95	5,025.91	5,225.35	5,009.58	5,027.84	5,642.61	5,430.86	5,240.75
25.00°	4,118.36	4,211.48	4,058.50	4,297.93	4,258.04	3,742.29	3,917.34	3,818.81	4,009.10	3,910.97	4,108.37	3,933.80	3,982.10	4,519.84	4,320.18	4,118.36
27.50°	3,328.24	3,364.55	3,279.23	3,408.78	3,409.26	2,975.29	3,097.83	3,054.29	3,199.72	3,135.58	3,246.63	3,139.20	3,171.58	3,640.12	3,500.51	3,328.24
30.00°	2,556.28	2,627.36	2,538.37	2,673.42	2,595.40	2,252.21	2,397.29	2,337.36	2,489.77	2,399.03	2,524.89	2,397.79	2,449.83	2,876.28	2,704.32	2,556.28
32.50°	1,940.07	2,004.71	1,942.87	2,047.74	2,017.47	1,727.64	1,835.67	1,825.83	1,935.17	1,871.41	1,929.13	1,818.14	1,840.04	2,199.24	2,057.51	1,940.07
35.00°	1,338.82	1,434.38	1,375.69	1,496.46	1,453.75	1,215.53	1,331.52	1,322.53	1,435.50	1,356.47	1,406.05	1,270.78	1,275.00	1,566.50	1,429.67	1,338.82
37.50°	890.00	959.16	923.63	1,017.69	996.97	764.46	872.69	857.65	973.11	918.41	948.20	828.02	820.15	1,046.44	935.57	890.00
40.00°	458.16	529.77	507.22	591.27	558.47	354.20	434.02	432.53	524.71	504.14	529.90	432.47	411.91	586.93	470.05	458.16
42.50°	227.64	260.63	250.57	295.48	280.56	167.36	196.43	208.77	260.98	249.01	257.80	203.57	189.27	290.67	237.86	227.64
45.00°	11.32	74.12	34.75	98.58	26.65	6.89	53.16	17.36	70.67	22.90	80.17	20.51	50.95	88.08	27.06	11.32
47.50°	7.43	6.63	17.20	8.66	13.76	4.63	5.01	9.51	10.08	12.71	6.65	10.83	4.74	8.91	14.18	7.43
50.00°	3.68	3.77	2.31	3.65	1.86	2.56	3.89	2.70	4.97	3.50	3.75	2.88	2.67	4.18	2.39	3.68
52.50°	2.59	2.66	1.89	1.47	1.99	1.88	3.08	2.38	3.18	2.77	2.51	1.99	1.80	2.22	2.12	2.59
55.00°	1.51	2.55	1.48	1.69	2.08	1.25	2.44	2.06	2.89	2.07	2.46	1.28	1.55	2.04	1.83	1.51
57.50°	0.99	2.18	1.15	1.59	1.56	1.12	1.81	1.69	2.32	1.66	2.05	1.33	1.53	1.64	1.43	0.99
60.00°	0.49	1.66	0.88	1.21	1.07	0.99	1.19	1.33	1.60	1.25	1.35	1.33	1.64	1.07	1.03	0.49
62.50°	0.63	1.36	1.00	1.04	1.12	0.93	1.07	1.04	1.20	0.95	0.97	1.07	1.39	0.90	0.72	0.63
65.00°	0.77	1.21	1.09	1.08	1.17	0.87	1.26	0.76	0.95	0.67	0.85	0.91	0.93	1.02	0.43	0.77
67.50°	0.75	1.12	1.06	1.10	1.15	0.90	1.20	0.68	0.67	0.74	0.87	1.20	0.97	0.90	0.73	0.75
70.00°	0.76	1.06	0.98	1.10	1.15	0.89	1.01	0.63	0.38	0.78	1.01	1.32	1.28	0.62	1.00	0.76
72.50°	1.05	0.99	0.74	1.04	1.21	0.76	0.97	0.75	0.56	0.66	0.79	0.92	1.10	0.92	1.09	1.05
75.00°	1.11	0.91	0.64	0.95	1.13	0.69	0.98	0.78	0.83	0.56	0.44	0.66	0.80	1.42	0.98	1.11
77.50°	0.86	0.76	0.70	0.53	0.85	0.69	0.95	0.71	0.86	0.47	0.87	0.52	0.87	1.56	0.63	0.86
80.00°	0.70	0.52	1.05	0.57	1.35	0.66	0.97	0.80	0.79	0.37	0.97	1.05	0.83	1.43	0.59	0.70
82.50°	0.84	0.66	0.70	0.84	1.15	0.71	0.96	0.94	0.64	0.48	0.87	0.88	0.61	1.10	0.61	0.84
85.00°	0.85	1.23	0.75	0.66	0.84	0.73	0.85	0.92	0.57	0.85	0.89	0.65	0.34	0.84	0.61	0.85
87.50°	0.70	0.65	1.01	0.68	1.02	0.97	0.84	0.99	0.67	0.60	0.87	0.69	0.40	0.82	0.52	0.70
90.00°	0.98	0.25	0.72	0.45	0.51	0.85	0.38	0.84	0.28	0.90	0.29	0.32	0.67	0.28	0.56	0.98
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
RCR	0	7,750	7,750	7,750	7,750	7,570	7,570	7,570	7,570	7,233	7,233	7,233	6,926	6,926	6,926	6,643	6,643	6,510
	1	7,437	7,277	7,134	7,005	7,280	7,138	7,010	6,894	6,876	6,775	6,682	6,636	6,557	6,484	6,415	6,354	6,229
	2	7,130	6,853	6,624	6,431	6,991	6,743	6,535	6,360	6,536	6,367	6,221	6,345	6,209	6,089	6,169	6,060	5,963
	3	6,834	6,472	6,191	5,968	6,711	6,384	6,127	5,920	6,218	6,004	5,827	6,065	5,887	5,738	5,922	5,776	5,651
	4	6,551	6,128	5,817	5,580	6,442	6,056	5,769	5,548	5,922	5,677	5,483	5,797	5,589	5,421	5,680	5,505	5,360
	5	6,283	5,815	5,488	5,247	6,185	5,756	5,452	5,224	5,645	5,381	5,179	5,542	5,314	5,134	5,446	5,249	5,091
	6	6,028	5,529	5,194	4,954	5,940	5,481	5,166	4,938	5,388	5,112	4,905	5,302	5,059	4,873	5,221	5,009	4,842
	7	5,787	5,267	4,930	4,694	5,708	5,226	4,908	4,682	5,149	4,865	4,658	5,076	4,823	4,635	5,008	4,783	4,612
	8	5,560	5,026	4,691	4,460	5,488	4,992	4,673	4,451	4,926	4,639	4,434	4,864	4,605	4,416	4,805	4,573	4,399
	9	5,346	4,804	4,472	4,248	5,281	4,775	4,458	4,242	4,718	4,430	4,228	4,665	4,403	4,215	4,615	4,377	4,202
	10	5,145	4,599	4,273	4,056	5,086	4,574	4,261	4,050	4,525	4,238	4,040	4,478	4,216	4,030	4,435	4,194	4,020

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	430.3 fc	3.9 ft
6.5 ft	308.1 fc	4.7 ft
7.5 ft	231.4 fc	5.4 ft
8.0 ft	203.4 fc	5.7 ft
10.0 ft	130.2 fc	7.2 ft
12.0 ft	90.4 fc	8.6 ft
14.0 ft	66.4 fc	10.0 ft
16.0 ft	50.8 fc	11.5 ft
20.0 ft	32.5 fc	14.3 ft
24.0 ft	22.6 fc	17.2 ft
28.0 ft	16.6 fc	20.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	189,580	189,580	189,580
45.00°	233	716	549
55.00°	38	38	53
65.00°	26	38	40
75.00°	63	36	64
85.00°	142	125	140

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	-21.0	-20.2	-20.7	-19.8	-19.5	-22.8	-21.9	-22.4	-21.6	-21.2
	3H	-19.7	-18.9	-19.3	-18.6	-18.2	-19.9	-19.1	-19.5	-18.8	-18.4
	4H	-18.3	-17.6	-17.9	-17.2	-16.8	-18.7	-17.9	-18.2	-17.6	-17.2
	6H	-17.0	-16.4	-16.6	-16.0	-15.6	-17.0	-16.4	-16.6	-16.0	-15.6
	8H	-16.2	-15.6	-15.8	-15.2	-14.8	-16.0	-15.4	-15.6	-15.0	-14.6
	12H	-15.1	-14.5	-14.7	-14.1	-13.7	-15.3	-14.7	-14.8	-14.3	-13.9
4H	2H	-21.0	-20.2	-20.6	-19.9	-19.5	-22.1	-21.4	-21.7	-21.0	-20.6
	3H	-19.0	-18.4	-18.6	-18.0	-17.6	-19.0	-18.4	-18.6	-18.0	-17.6
	4H	-17.5	-17.0	-17.1	-16.6	-16.1	-17.8	-17.3	-17.4	-16.9	-16.4
	6H	-15.7	-15.3	-15.3	-14.8	-14.4	-16.0	-15.5	-15.5	-15.1	-14.6
	8H	-14.8	-14.4	-14.3	-13.9	-13.4	-14.8	-14.4	-14.3	-13.9	-13.5
	12H	-13.4	-13.1	-12.9	-12.6	-12.1	-13.9	-13.6	-13.4	-13.1	-12.6
8H	4H	-17.0	-16.6	-16.5	-16.2	-15.7	-17.3	-16.9	-16.9	-16.5	-16.0
	6H	-14.9	-14.6	-14.4	-14.1	-13.6	-15.1	-14.8	-14.6	-14.3	-13.8
	8H	-13.7	-13.4	-13.1	-12.9	-12.4	-13.8	-13.6	-13.3	-13.0	-12.5
	12H	-11.9	-11.7	-11.4	-11.2	-10.6	-12.7	-12.5	-12.2	-12.0	-11.4
12H	4H	-16.8	-16.5	-16.3	-16.0	-15.5	-17.2	-16.9	-16.7	-16.4	-15.9
	6H	-14.7	-14.4	-14.1	-13.9	-13.4	-14.8	-14.6	-14.3	-14.1	-13.5
	8H	-13.3	-13.1	-12.8	-12.6	-12.0	-13.4	-13.2	-12.9	-12.7	-12.1

Corrected UGR values based on total output lumens

SHR = 1.0